Remarks

Claims 1-10 are currently pending. Support for new claim 10 can be found at, for example, paragraph [0028] of the present published application.

35 U.S.C. § 112

The Examiner rejected claims 1-9 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended claims 1 and 3 by replacing "preparable by" and "obtainable by" with "prepared by" and "obtained by" as the Examiner suggested and respectfully request the rejection be withdrawn.

35 U.S.C. § 103(a)

The Examiner rejected claims 1-9 as being unpatentable over Dirschl et al. (US 6,080,830) in view of Wamprecht et al. (US 2003/0065088). Applicants respectfully traverse this rejection for the following reasons.

Claim 1 is directed to a method for treating fiber materials which includes applying an aqueous dispersion comprising a composition A combined with a polymer which comprises perfluoroalkyl groups thereto, composition A being prepared by the following successive steps of:

a) reacting a fluorine-free polyfunctional isocyanate having two or more NCO groups in the molecule or a mixture of such isocyanates with a fluorine-free monohydric alcohol having 10 to 24 carbon atoms or a mixture of such alcohols by using 2 to 10 equivalents of NCO groups per equivalent of OH groups of the alcohol;

b) reacting the product obtained in step a) with a ketone oxime in such proportions that there are still free isocyanate groups present in the resultant product mixture; and

c) reacting the product mixture obtained in step b) with a fluorine-free organic amine which comprises two or three hydroxyl groups or with a fluorine-free polyhydric alcohol or with a mixture of such compounds in such proportions that the resultant product is free of isocyanate groups

New claim 10 is similar to claim 1, except in step a) the fluorine-free polyfunctional isocyanate is defined to be a mixture comprising about 80-95% by weight of a polymeric isocyanate and about 5-25% of an alicyclic isocyanate.

Applicants agree with the Examiner's conclusions in paragraph 7 that Dirschl et al. do not teach or suggest: (1) reacting a fluorine-free polyfunctional isocyanate with a monohydric alcohol component; or (2) the sequence of steps a), b) and c) as recited in claims 1 and 10.

The Examiner has added the teachings of Wamprecht et al. in which a polyurethane is prepared by reacting:

i) at least one polyether polyol;

ii) at least one monoalcohol;

iii) at least one (cyclo)aliphatic and/or aromatic diisocyanate; and

iv) at least one oxime, monoamine di-and/or polyamine with 2 to 18 carbon atoms.

The Examiner urges one of ordinary skill in the art would have incorporated the monoalcohol taught in Wamprecht et al. into the polyurethane composition taught in

Dirschl et al. for the purpose of improving the polyurethane composition's thickening properties.

Applicants respectfully disagree with the Examiner's reasoning. First, the Examiner notes that Wamprecht et al. teach it is the monoalcohol which provides the improved thickening properties. However, Wamprecht et al does not teach that such improvement is due solely to the monoalcohol, but instead teaches it is the specific combination of the polyether and monoalcohol which provides the improvement. Thus, one of ordinary skill in the art, when reading Wamprecht et al. as a whole, would have incorporated both the polyether and monoalcohol into the polyurethane composition taught in Dirschl et al. for the purpose of improving thickening properties as the Examiner urges.

Second, one of ordinary skill in the art, when setting out to improve methods of oil- and water-repellent finishing of fiber materials, would not have even considered Wamprecht et al. since the polyurethanes taught in Wamprecht et al. are conceived for use in different industrial methods, mainly paint and adhesive applications. Although Wamprecht et al. suggest they can be used to adjust the rheological properties of printing ink or textile dye compositions, such compositions are quite different from those used in methods for finishing fiber materials. Wamprecht et al. provides no teaching or suggestion that the oil- and water-repellency of fiber materials could be improved by treating the fiber materials with an aqueous dispersion containing the combination of a polymer comprising perfluoroalkyl groups and a composition A prepared by reacting in successive steps the components in a), b) and c) as presently claimed.

Nevertheless, Applicants have surprisingly found the finishing properties of fiber materials can be significantly improved when such fiber materials are treated according to the method of the present invention. In particular, as demonstrated in Examples 1-3 of the present application, fiber material treated with an aqueous dispersion containing composition A (prepared by successive steps a, b) and c)) and a polymer containing perfluoroalkyl groups exhibited a soft hand and excellent water and oil-repellency. Moreover, Example 4 demonstrates the criticality of preparing composition A according to successive steps a), b) and c). As shown in Example 4, when composition A was prepared first by steps a) and c) (i.e. reacting isocyanate with monoalcohol followed by reaction with amine), the resulting product was of rubbery consistency and unsuitable for further reaction according to step b). Applicants found this both surprising and unexpected.

Thus, for the reasons stated above, Applicants respectfully request all rejections be withdrawn and a notice of allowance issued for all pending claims.

The Commissioner for Patents is hereby authorized to deduct any fee due in connection with the filing of this document from Huntsman Corporation Deposit Account No. 08-3442.

Respectfully Submitted,

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